(54) Title: SECURE MULTI-APPLICATION CARD SYSTEM
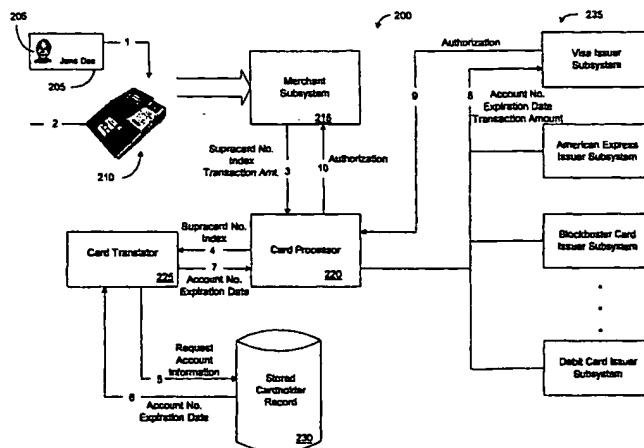
(57) Abstract: A multi-application card for providing secure access to multiple card accounts. This system includes a multi-appli-
cation card storing a readable identification number corresponding to the card, and a database located remotely from the card. The
database correlates the identification number with a record associated with the card, and the record contains a list of card account
numbers and associated indexes. The system also includes a translator that receives a transaction request including the identification
number read from the multi-application card and one of the associated indexes obtained from a source other than the card. The trans-
lator then uses the received identification number to access the corresponding record in the database, and uses the received index
number to retrieve the corresponding card account number and expiry date. The translator then transmits the card account number
and expiry date in response to the transaction request. With this system, a cardholder can carry a single multi-application card that
provides access to multiple accounts associated with different cards by using a simple index. Thus, the cardholder can use multiple
credit, debit and other non-encoded, magnetically encoded, bar-coded and microprocessor based cards, without having to carry each
individual card.

i. a card reader, capable of reading data, including at least an identification number, from the cardlike device;

ii. a data entry means;

iii. means to:

    1. read the identification number from the cardlike device;

    2. determine whether the identification number needs to be translated to an account number;

    3. prompt user to pre-select desired account number by entering its unique index using the data entry means;

    4. send an account number request, including the identification number, together with the index, to a card translator subsystem;

    5. receive a response to the account number request.

3. The system of claim 2, wherein the client subsystem is portable.

4. The system of claim 2, wherein the client subsystem is mobile.

5. The system of claim 2, wherein the index is at least one numeric character.

6. The system of claim 2, wherein the account number request is sent to a card processor subsystem that is operative to receive the request from any subsystem, process the request to determine that a card translator subsystem should receive the request, and transmit the request to the card translator subsystem.

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7. The system of claim 2, wherein the account number request is sent to a card issuer subsystem that is operative to receive the request from any subsystem, process the request to determine that a card translator subsystem should receive the request, and transmit the request to the card translator subsystem.

8. The system of claim 2, wherein the account number request is sent to a card translator subsystem from a card processor subsystem that is operative to transmit the request including the identification number, together with the index, to the card translator subsystem.

9. The system of claim 2, wherein the account number request is sent to a card translator subsystem from a card issuer subsystem that is operative to transmit the request including the identification number, together with the index, to the card translator subsystem.

10. A system for secure processing of multi-application cardlike devices, comprising:

a) at least one client subsystem, comprising:

    i. a card reader, capable of reading data, including at least an identification number, from a cardlike device;

    ii. a data entry means;

b) at least one card issuer subsystem;

c) a card translator subsystem, comprising:

    i. a database comprising at least one record;

    ii. means to:

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1. receive an account number request including at least an identification number and an index;

2. use the identification number and the index to retrieve account information pertaining to a single account number;

5   3. when access to account information should be disabled, send a first response to the subsystem from which the account number request was received;

4. when access to account information should be re-enabled, send a second response to the subsystem from which the 10   account number request was received;

5. when access to the account information should be denied, send a third response to the subsystem from which the account number request was received; and

.6. when access to the account information is permitted, send 15   a fourth response including information pertaining to the single account, the information including at least the account number, to the subsystem from which the account number request was received.

20   11. The system of claim 10, wherein the account number request is received by the card translator subsystem from a card processor subsystem that is operative to receive a request from any subsystem, process the request to determine that the card translator subsystem should receive the request, and transmit 25   the request to the card translator subsystem.

12. The system of claim 10, wherein the account number request is received by the card translator subsystem from a card processor

subsystem that is operative to transmit the request including an identification number, together with an index, to the card translator subsystem.

5   13. The system of claim 10, wherein the account number request is received by the card translator subsystem from a card issuer subsystem that is operative to receive a request from any subsystem, process the request to determine that the card translator subsystem should receive the request, and transmit

10   the request to the card translator subsystem.

14. The system of claim 10, wherein the account number request is received by the card translator subsystem from a card issuer subsystem that is operative to transmit the request including an

15   identification number, together with an index, to the card translator subsystem.

15. The system of claim 10, wherein the account number request disables access to account information for future requests that

20   include the identification number.

16. The system of claim 10, wherein the account number request re-enables access to account information for future requests that include the identification number.

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17. The system of claim 10, wherein the response to the account number request is received by a card processor subsystem, the card processor subsystem operative to receive the response,

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process the response and transmit a response to the subsystem that initiated the account number request.

18. The system of claim 10, wherein the response to the account number request is received by a card issuer subsystem, the card issuer subsystem operative to receive the response, process the response and transmit a response to the subsystem that initiated the account number request.

19. The system of claim 10, wherein the index is at least one numeric character.

20. The system of claim 10, wherein the translator and database are stored in a system selected from the group comprising a client system, card processor system and card issuer system.

21.   A method for secure processing of multi-application card transactions, comprising the steps of:

a) reading an identification number from a cardlike device;

b) determining whether the identification number needs to be translated to an account number;

c) accepting an index, pertaining to a single account number, using a data entry means;

d) sending an account number request, including the identification number, together with the index, to a card translator subsystem;

e) using the identification number and the index, retrieving account information pertaining to the single account number;

f) based on the index selected, disabling access to account information for future requests that include the identification number;

g) based on the index selected, re-enabling access to account information for future requests that include the identification number;

h) based on the index selected, receiving a response including at least the account number, pertaining to the pre-selected desired account.

22. The method of claim 21, further including sending the account number request to a card processor subsystem that is operative to receive a request from any subsystem, process the request to determine that the card translator subsystem should receive the request, and transmit the request to the card translator subsystem.

23. The method of claim 21, further including an account number request sent from a card processor subsystem that is operative to transmit the request including an identification number, together with an index, to a card translator subsystem.

24. The method of claim 21, further including sending the account number request to a card issuer subsystem that is operative to receive a request from any subsystem, process the request to determine that the card translator subsystem should receive the request, and transmit the request to the card translator subsystem.

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AMENDED SHEET (ARTICLE 19)

25. The method of claim 21, further including an account number request sent from a card issuer subsystem that is operative to transmit the request including an identification number, together with an index, to a card translator subsystem.

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26. A computer controlled apparatus operable for performing the method of claim 21.

Statement under Article 19

The following claims are cancelled:

Claims 3, 4 and 17 (reference to Merchant subsystems);
Claim 5 (reference to Bankcard system);
Claim 7 (content of record not claimed);
Claim 9 (photograph on the card);
Claim 10 (the system and method are claimed, not the card);
Claims 14 and 20 (trivial);
Claims 8 and 22 (reference to PINs).

The original claims have been amended to more accurately describe the invention features:

1. The multi-application (not multi credit) card system. Applications could involve all types of content including data, image, voice, audio, video, etc.

2. Webster's II New College Dictionary defines "client" as "a computer or program that can download files for manipulation, run applications or request applications-based services from a file server". References to "merchant subsystem" need to be replaced by the more correct "client subsystem", in the description and drawings.

3. Other inventions use Personal Identification Numbers (PINs) to verify the identity of the user. This invention uses a field location identifier - called an index - that is unique to each card account. Multiple accounts can have the same PIN number. But two accounts cannot share the same index.

4. Pre-selection of Account Numbers. This invention, in contrast to others, requires that the user know and pre-select the account desired by specifying its unique index. The user must enter the index *before* any retrieval takes place.

5. The Lock/Unlock (or Disable/Re-enable) features have been included in the independent claims.

6. The card processor and card issuer subsystems could initiate account requests and act as client subsystems. This feature, while included in the original claims, has been clarified in multiple dependent claims.

7. The portable and mobile features of client devices (phones pictured in the drawings and mentioned in the description) have been added to the claims.

References to a remote database have been removed since the system uses the client-server model, where location of the database could be anywhere. In Claim 12, references to "Merchant" and "Bankcard" are removed.

While no major change is necessary to either the description or the drawings, the difference between the invention and its embodiments need more clarification.

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1. A system allowing a single cardlike device to be utilized in accessing
   a plurality of applications, the system comprising:

   a) a card processing system;

   b) a card reader communicatively coupleable to the card processing
   system, the card reader being operative to read a data
   identification number from the single cardlike device and to
   receive an index number through a data interface;

   c) the processing system, in response to receiving the data
   identification number and index number from the card reader,
   being operative to:

   i. identify an application associated with the data identification
   number and index when the index is within a first subset of the
   domain of potential index numbers;

   ii. disable the cardlike device from further use when the index is
   within a second subset of the domain of potential index numbers;
   and

   iii. re-enable a disabled cardlike device when the index is within
   a third subset of the domain of potential index numbers.

2. A system using a single cardlike device to access a plurality of
   applications, comprising:

   a) at least one card issuer subsystem;

   b) at least one card translator subsystem;

   c) a client subsystem, comprising:

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